

Sales Variances and Business Combinations

Overview of Sales Variances

Sales variance analysis compares actual sales performance to budgeted sales to identify deviations, understand their causes, and implement corrective actions. It is critical for evaluating the performance of the sales department and supporting strategic decision-making.

- **Definition:** The analysis of differences between actual and budgeted revenue, variable costs, and contribution margin due to variations in sales price, volume, or product mix.
- **Purpose:** Identifies factors affecting revenue (e.g., pricing strategies, market demand) to optimize sales performance and align with organizational goals.
- **Key Distinction:** Sales variances focus on revenue and contribution margin, unlike manufacturing input variances, which focus on production costs.

Determining Favorable vs. Unfavorable Variances

- **Revenue Items:**
 - Favorable (F): Actual revenue > Budgeted revenue (positive result when Actual - Standard).
 - Unfavorable (U): Actual revenue < Budgeted revenue (negative result).
- **Use of Contribution Margin:** When available, use contribution margin (CM) per unit instead of sales price in variance calculations for more accurate profitability analysis, unless another line item (e.g., revenue) is specified.

Sales Variances for a Single Product

For a single product, sales variances are divided into two main categories:

1. **Sales Price Variance:**
 - Measures the impact of actual selling price (or contribution margin) differing from the budgeted price.
 - Formula:
[
$$\text{Sales Price Variance} = (\text{Actual Price} - \text{Standard Price}) \times \text{Actual Quantity}$$

]
or
[
$$\text{Sales Price Variance} = (\text{Actual CM} - \text{Standard CM}) \times \text{Actual Quantity}$$

]
2. **Sales Volume Variance:**
 - Measures the impact of actual sales volume differing from the static (master) budget volume.

- Formula:
[
$$\text{Sales Volume Variance} = (\text{Actual Quantity} - \text{Standard Quantity}) \times \text{Standard CM}$$

]

- Note: Uses the static budget quantity, not the flexible budget quantity.

Static vs. Flexible Budget Variances

- **Static Budget Variance:** Difference between actual results and the static (master) budget (includes both price and volume effects).
- **Flexible Budget Variance:** Difference between actual results and the flexible budget (essentially the sales price variance, as it adjusts for actual volume).
- **Sales Volume Variance:** Difference between the flexible budget and static budget (reflects volume differences).

Sales Variances for Multiple Products

When multiple products are sold, variances are calculated for each product and summed, with additional sub-variances for mix and quantity.

Total Sales Variance

- **Formula:**
[
$$\text{Total Sales Variance} = \text{Actual Revenue} - \text{Static Budget Revenue}$$

]
or, using contribution margin:
[
$$\text{Total Sales Variance} = (\text{Actual CM} \times \text{Actual Quantity}) - (\text{Standard CM} \times \text{Standard Quantity})$$

]

Sub-Variances

1. **Selling Price Variance:**
 - Calculate for each product:
[
$$\text{Selling Price Variance} = (\text{Actual CM} - \text{Standard CM}) \times \text{Actual Quantity}$$

]
◦ Sum the variances for all products.
2. **Sales Volume Variance:**
 - Calculate for each product:
[
$$\text{Sales Volume Variance} = (\text{Actual Quantity} - \text{Standard Quantity})$$

]

$\times \text{Standard CM}$
]

- Sum the variances for all products.
- Sub-divided into:
 - **Sales Mix Variance:** Measures the impact of selling a different proportion of products than budgeted.
[
 $\text{Sales Mix Variance} = (\text{WASP}_{\text{AM}} - \text{WASP}_{\text{SM}}) \times \text{Actual Quantity}$
]
 - WASP_{AM} : Weighted Average Standard Contribution Margin of Actual Mix
 - WASP_{SM} : Weighted Average Standard Contribution Margin of Standard Mix
 - **Sales Quantity Variance:** Measures the impact of overall sales volume differing from the static budget.
[
 $\text{Sales Quantity Variance} = (\text{Actual Quantity} - \text{Standard Quantity}) \times \text{WASP}_{\text{SM}}$
]

Example: New Company

- **Scenario:** New Company produces chairs and tables. Budgeted and actual data for the first month:

Product Budgeted CM Actual CM Budgeted Units Actual Units

Chairs	\$60	\$50	150	100
Tables	\$250	\$300	60	50

- **Calculations:**

1. **Total Sales Variance:**
 - Actual Revenue = $(100 \times 50) + (50 \times 300) = 5,000 + 15,000 = \$20,000$
 - Static Budget Revenue = $(150 \times 60) + (60 \times 250) = 9,000 + 15,000 = \$24,000$
 - Total Variance = $(20,000 - 24,000 = -\$4,000 \text{ U})$
2. **Sales Price Variance:**
 - Chairs: $(50 - 60) \times 100 = -10 \times 100 = -\$1,000 \text{ U}$
 - Tables: $(300 - 250) \times 50 = 50 \times 50 = \$2,500 \text{ F}$

- Total Price Variance = $(-1,000 + 2,500 = \$1,500 \text{ F})$

3. Sales Volume Variance:

- Chairs: $(100 - 150) \times 60 = -50 \times 60 = -\$3,000 \text{ U}$
- Tables: $(50 - 60) \times 250 = -10 \times 250 = -\$2,500 \text{ U}$
- Total Volume Variance = $(-3,000 - 2,500 = -\$5,500 \text{ U})$

4. Weighted Average Standard Price of Standard Mix (WASP_{SM}):

- Standard Mix: Chairs = $(150 \div (150 + 60) = 0.7143)$, Tables = $(60 \div 210 = 0.2857)$
- $(\text{WASP}_{\text{SM}}) = (0.7143 \times 60) + (0.2857 \times 250) = 42.858 + 71.425 = \114.283

5. Weighted Average Standard Price of Actual Mix (WASP_{AM}):

- Actual Mix: Chairs = $(100 \div (100 + 50) = 0.6667)$, Tables = $(50 \div 150 = 0.3333)$
- $(\text{WASP}_{\text{AM}}) = (0.6667 \times 60) + (0.3333 \times 250) = 40.002 + 83.325 = \123.327

6. Sales Mix Variance:

- Actual Quantity Total = $(100 + 50 = 150)$
- Mix Variance = $(123.327 - 114.283) \times 150 = 9.044 \times 150 \approx \$1,356.60 \text{ F}$

7. Sales Quantity Variance:

- Standard Quantity Total = $(150 + 60 = 210)$
- Quantity Variance = $(150 - 210) \times 114.283 = -60 \times 114.283 \approx -\$6,856.98 \text{ U}$
- **Verification:** Total Volume Variance = Mix Variance + Quantity Variance = $(1,356.60 - 6,856.98 \approx -\$5,500 \text{ U})$
- Total Sales Variance = Price Variance + Volume Variance = $(1,500 - 5,500 = -\$4,000 \text{ U})$

Variances for Service Companies

- **Application:** Service companies apply variance analysis to their "product" (services provided), focusing on revenue and cost variances.
- **Segregation:** If a company provides both services and products, revenue and costs should be separated in the accounting system for accurate variance analysis.
- **Overhead Analysis:** Service companies can analyze selling, general, and administrative overhead costs using variance analysis, similar to manufacturing overhead.

Market Variances

- **Purpose:** Further analyze the sales quantity variance to assess market-driven impacts.
- **Sub-Variations:**
 1. **Market Size Variance:** Measures the impact of the overall market size being larger or smaller than expected.
 - Formula:
[
$$\text{Market Size Variance} = (\text{Actual Market Size} - \text{Budgeted Market Size}) \times \text{Budgeted Market Share} \times \text{Standard CM}$$

]
 2. **Market Share Variance:** Measures the impact of actual market share differing from budgeted market share.
 - Formula:
[
$$\text{Market Share Variance} = \text{Budgeted Market Size} \times (\text{Actual Market Share} - \text{Budgeted Market Share}) \times \text{Standard CM}$$

]

Additional Insights

- **Flexible Budget Integration:** Sales price variance aligns with the flexible budget, isolating price effects, while volume variance uses the static budget to assess volume impacts.
- **Corrective Actions:** Unfavorable price variances may prompt pricing strategy reviews, while volume variances suggest market demand or marketing adjustments.
- **Strategic Alignment:** Sales variance analysis supports revenue optimization, ensuring alignment with sales targets and organizational goals.

Business Combinations and Consolidations: Example Problem

Problem

Scenario: On January 1, 2025, Parent Co. acquires 100% of Sub Co. for \$40,000,000 in cash to expand into the furniture retail market. Sub Co.'s net assets have a fair value of \$32,000,000, including a brand name valued at \$6,000,000 with an indefinite life (not amortized). Sub Co. sells sofas and armchairs with the following budgeted and actual data for Q1 2025:

Product	Budgeted CM	Actual CM	Budgeted Units	Actual Units
Sofas	\$200	\$180	1,000	900
Armchairs	\$100	\$120	500	600

Calculate goodwill, prepare the consolidation journal entry under US GAAP, compute sales variances (total, price,

Product	Budgeted CM	Actual CM	Budgeted Units	Actual Units
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volume, mix, quantity), and discuss how sales variance analysis supports post-acquisition performance evaluation.

Solution:

1. **Goodwill Calculation:**
 - Purchase price: \$40,000,000
 - Fair value of net assets: \$32,000,000
 - Goodwill = \$40,000,000 - \$32,000,000 = **\$8,000,000**
2. **Consolidation Journal Entry (US GAAP):**
3. Dr Assets (excluding brand name) 26,000,000
4. Dr Brand Name 6,000,000
5. Dr Goodwill 8,000,000
6. Cr Cash 40,000,000
7. **Sales Variance Analysis:**
 - **Total Sales Variance:**
 - Actual Revenue = (900 $\times$ 180) + (600 $\times$ 120) = 162,000 + 72,000 = \$234,000)
 - Static Budget Revenue = ((1,000 $\times$ 200) + (500 $\times$ 100) = 200,000 + 50,000 = \$250,000)
 - Total Variance = (234,000 - 250,000 = -\$16,000 U)
 - **Sales Price Variance:**
 - Sofas: ((180 - 200) $\times$ 900 = -20 $\times$ 900 = -\$18,000 U)
 - Armchairs: ((120 - 100) $\times$ 600 = 20 $\times$ 600 = \$12,000 F)
 - Total Price Variance = (-18,000 + 12,000 = -\$6,000 U)
 - **Sales Volume Variance:**
 - Sofas: ((900 - 1,000) $\times$ 200 = -100 $\times$ 200 = -\$20,000 U)
 - Armchairs: ((600 - 500) $\times$ 100 = 100 $\times$ 100 = \$10,000 F)
 - Total Volume Variance = (-20,000 + 10,000 = -\$10,000 U)
 - **Weighted Average Standard Price of Standard Mix (WASP_{SM}):**
 - Standard Mix: Sofas = (1,000 $\div$ (1,000 + 500) = 0.6667), Armchairs = (500 $\div$ 1,500 = 0.3333)

- $(WASP_{SM}) = (0.6667 \times 200) + (0.3333 \times 100) = 133.34 + 33.33 = \166.67
- **Weighted Average Standard Price of Actual Mix ($WASP_{AM}$):**
 - Actual Mix: Sofas = $(900 \div (900 + 600) = 0.6)$, Armchairs = $(600 \div 1,500 = 0.4)$
 - $(WASP_{AM}) = (0.6 \times 200) + (0.4 \times 100) = 120 + 40 = \160
- **Sales Mix Variance:**
 - Actual Quantity Total = $(900 + 600 = 1,500)$
 - Mix Variance = $((160 - 166.67) \times 1,500 = -6.67 \times 1,500 \approx -\$10,005 \text{ U})$
- **Sales Quantity Variance:**
 - Standard Quantity Total = $(1,000 + 500 = 1,500)$
 - Quantity Variance = $((1,500 - 1,500) \times 166.67 = 0 \times 166.67 = \$0)$
- **Verification:** Total Volume Variance = Mix Variance + Quantity Variance = $(-10,005 + 0 \approx -\$10,000 \text{ U})$
- Total Sales Variance = Price Variance + Volume Variance = $(-6,000 - 10,000 = -\$16,000 \text{ U})$

8. Strategic and Variance Analysis Notes:

- **Variance Analysis:** The \$6,000 unfavorable price variance (driven by lower sofa prices) suggests pricing strategy adjustments, while the \$10,000 unfavorable volume variance (due to sofa sales shortfall and mix shift to armchairs) indicates market demand issues. The mix variance highlights a shift toward lower-margin armchairs.
- **Flexible Budget:** Adjusts revenue to actual volume (1,500 units), isolating price effects for accurate evaluation.
- **Post-Acquisition Performance Evaluation:** Sales variance analysis supports **control** by identifying pricing and volume issues in Sub Co.'s sales, ensuring alignment with Parent Co.'s revenue goals. It informs the **sales budget** by refining pricing and marketing strategies.
- **Consolidation:** Eliminate Sub Co.'s equity accounts. Goodwill and brand name are tested annually for impairment under US GAAP (brand name not amortized due to indefinite life).
- **Strategic Alignment:** Sales variance analysis ensures Sub Co.'s sales performance supports Parent Co.'s strategic objective of profitable expansion in the furniture retail market.